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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,754	09/18/2001	Charles J. Rice	4810-002	8506
24112	7590	03/15/2005	EXAMINER	
COATS & BENNETT, PLLC P O BOX 5 RALEIGH, NC 27602			NGUYEN, PHONG H	
			ART UNIT	PAPER NUMBER
			3724	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/954,754		RICE, CHARLES J.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Phong H Nguyen		3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Claim Rejections - 35 USC § 102*

2. Claims 1-12, 15-26 and 29-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (5,609,081).

Regarding claims 1, 15, 29, 32, 33 and 34, Lin teaches a tube-forming device comprising:

- a) a work piece holder to receive a tubular work piece 92;
- b) a tool 30 insertable into an end of the tubular work piece held by the work piece holder;
- c) a tool holder to receive the tool and movable in first and second directions;
- d) a first rotating cam (51 or 91) to drive the tool holder in the first direction during a first phase of a tool cycle to engage the tool with a first side of the work piece; and
- e) a second rotating cam (51 or 91) driven synchronously with the first rotating cam to drive the tool holder in a second direction during a second phase of the tool cycle to engage the tool with the second side of the work piece.

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Regarding claims 2 and 16, a die block is best seen in Figs. 1 and 3B.

Regarding claims 3, 4, 17 and 18, an interchangeable die 81 is best seen in Fig.

3B.

Regarding claims 5-9 and 19-23, the tool 30 is best seen in Figs. 1 and 3A.

Regarding claims 10 and 24, a carrier block 50 is best seen in Fig. 1 and 3A.

Regarding claims 11, 12, 25 and 26, first and second cam openings 502 and first cam and second cams (51 or 91) are best seen in Figs. 1, 3A and 4.

Regarding claim 30, Lin teaches a method of forming the end of a tubular work piece comprising:

- a) inserting a work piece 92 into a work piece holder such that the work piece inserts over a tool;
- b) rotating a dual action cam assembly (51 or 91) to reciprocate the tool during a tool cycle;
- c) wherein during a first phase of the tool cycle, the tool is driven in a first direction by the cam assembly to engage a first side of the tubular work piece, and
- d) wherein during a second phase of the tool cycle, the tool is driven in a second direction by the cam assembly to engage a second side of the tubular work piece.

See Figs. 1-4.

Regarding claim 31, the tool is idle during a third phase of the tool cycle to allow a work piece to be inserted into the work piece holder. The third phase occurs as the blades are pulled away from the pipe. See Figs. 1-4.

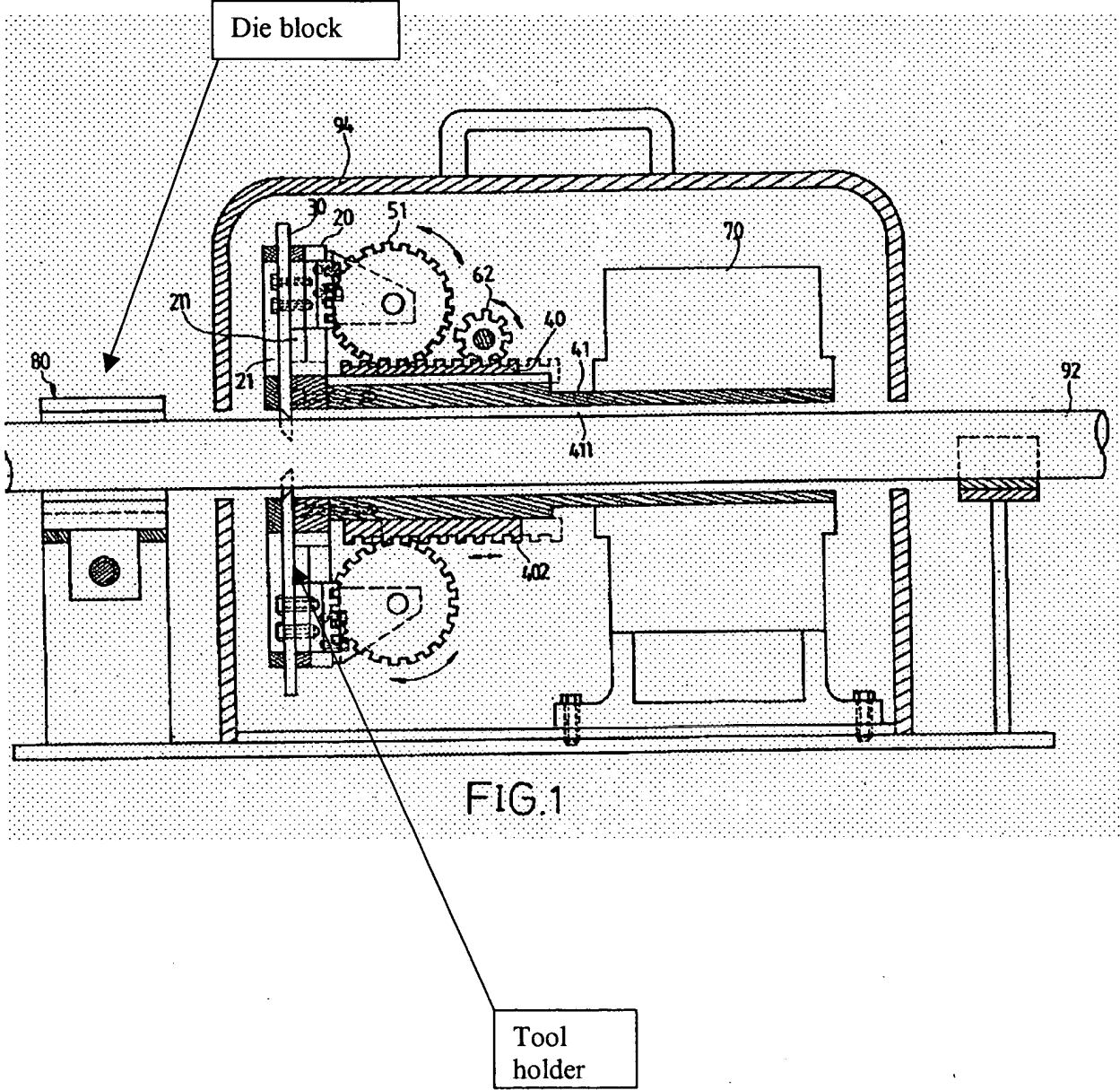
Regarding claim 35, the first and the second rotating cams are disposed on a common shaft 41. See Fig. 1.

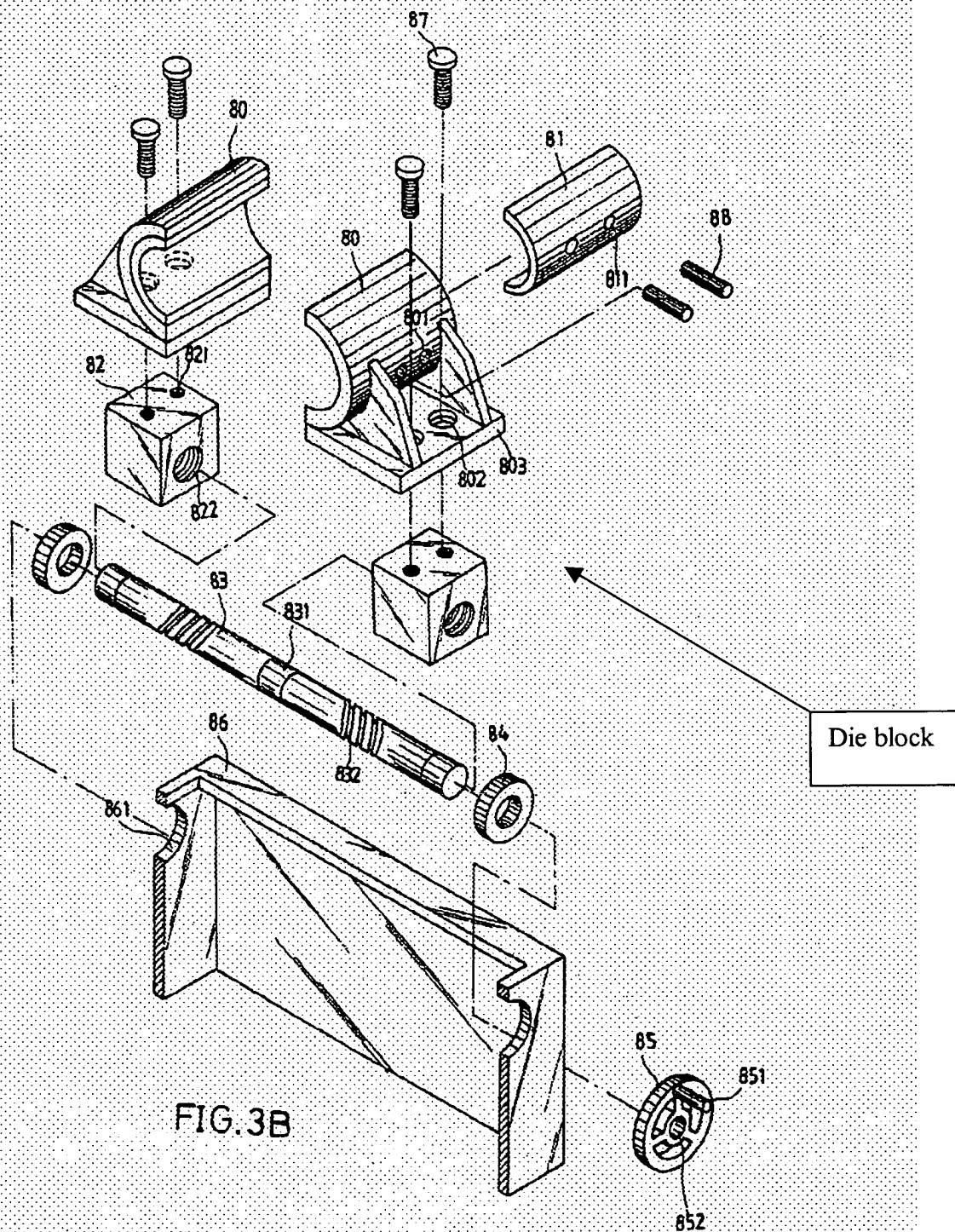
Regarding claims 36 and 37, a first phase occurs when cutting blades are at an idle position; a second phase occurs when cutting blades cut a tube; and a third phase occurs when cutting blades return to the idle position. See Fig. 1.

Regarding claim 38, the driving cams (51 or 91) are stacked along a common axis of rotation. See Fig. 1.

Regarding claim 39, a first lobe 51, a second lobe 51, a first surface 502 and a second surface 502 are best seen in Figs. 1 and 3A.

Regarding claim 40, a first lobe 51 (at a 9 o'clock position) contacts a first surface 502 and a second lobe 51 (at a 6 o'clock position) contact a second surface 402. See Figs. 1 and 3A.





***Claim Rejections - 35 USC § 103***

3. Claims 1, 10, 11, 13-15 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vernacchio (4,986,154) in view of Tseng (6,269,721 B1).

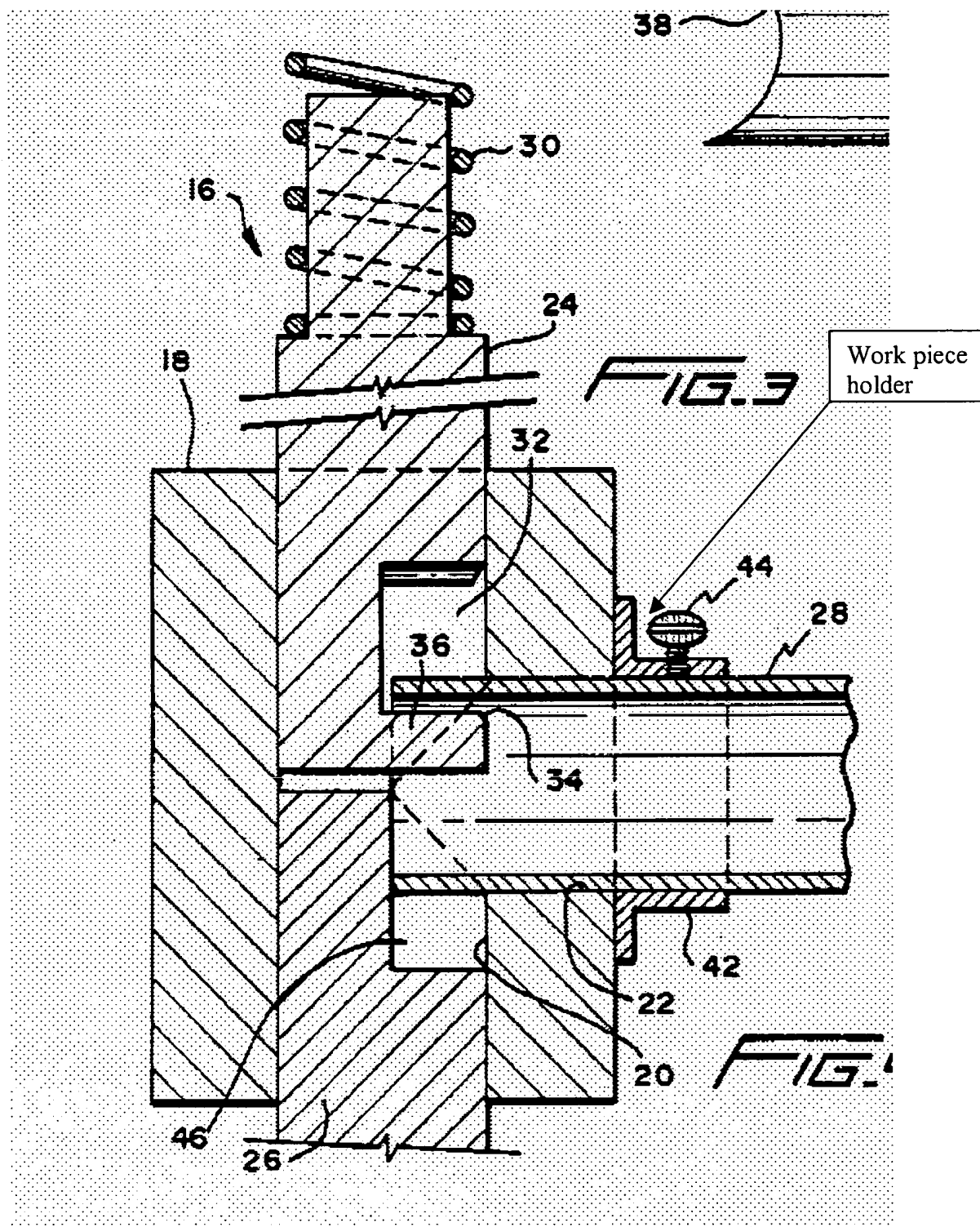
Regarding claims 1 and 15, Vernacchio teaches a tube-forming device comprising a work piece holder, a tool 36 having a cutting edge 34 and a tool holder 26. See Fig. 3. Vernacchio fails to teach a dual action-rotating cam to drive the tool holder. Tseng teaches a driving cam 30 capable of driving a tool holder. See Fig. 3. It would have been obvious to one skilled in the art to provide a cam as taught by Tseng to drive a tool holder in the Vernacchio's tube-forming device.

Tseng also teaches providing a plurality of driving cams 30 to drive a plurality of tools. See Fig. 3. It would have been obvious to one skilled in the art to provide the tube-forming device of Vernacchio two tool holders side by side, each has a driving cam as taught by Tseng to cut more tubes in less time.

Regarding claims 10 and 11, a reciprocating carrier block 26 is best seen in Fig. 3 in Vernacchio.

Regarding claim 13, 14, 27 and 28, a biasing means 30 is best seen in Fig. 3 in Vernacchio.





*Response to Arguments*

4. Applicant's arguments filed on 12/29/2004 have been fully considered but they are not persuasive.

Regarding Applicant's arguments with respect to 35 USC 102 rejections under Lin with respect to two phrases, "insertable into an end of the tubular work piece" and "the work piece inserts over a tool", the phrase "insertable into an end of the tubular work piece" is interpreted "placeable against an end of the tubular work piece" since Applicant does clearly define a cutting tool being disposed inside a hollow end of a work piece; and the work piece is clearly inserts over a tool 30 since the tool 30 comprises a lower tool and a upper tool.

Applicant's arguments with respect to 35 USC 103 rejections under Vernacchio and Lin are not found persuasive.

First, regarding the phrase "first and second sides", since Applicant does define what constitutes "first and second sides", the Examiner arbitrarily assigns "first and second sides" of the tube.

Second, regarding the argument that the tools never cut the alleged second side in a second direction, the word "engage" is interpreted as "touch". When the tools are retracted to their original position (moving in a second direction), they are in contact with the work piece. Thus, Tseng anticipates the claimed invention.

Third, regarding the argument with respect to claim 1 that neither Vernacchio and Tseng teaches or suggested that the first and the second cam drive a single tool holder, the word "comprising" is an open term and it does not limit to one tool holder.

Therefore, it is reasonable to interpret the claim as a plurality of driving tool to drive a plurality of tools.

Finally, regarding the argument with respect to the motivation for combining Vernacchio and Tseng, claim 1 is broad enough to be interpreted into a different embodiment which is anticipated by the combination of Vernacchio and Tseng.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phong H Nguyen whose telephone number is 703-305-4989. The examiner can normally be reached on Mon-Fri.

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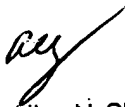
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan Shoap can be reached on 703-308-1082. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PN:



March 8, 2005



Allan N. Shoap  
Supervisory Patent Examiner  
Group 3700